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# THE TEACHING OF DRAWING AND USE OF BLACKBOARD ILLUSTRATIONS.

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THE greatest obstacle to the progress of drawing, as a subject of general education in the common schools of America, appears to be a want of confidence on the part of the regular school teachers in their own ability to learn drawing themselves and teach it to their pupils. So much of the wonderful has been associated with the possession of great art-powers, with which simple ability to draw has been confused, that perhaps this diffidence is reasonable; it becomes, however, unreasonable when it is associated with disinclination to learn, on the ground that to understand and succeed in mastering the elements of drawing, special gifts are required in art. The prevalence of this erroneous opinion is due mainly to the fact that, until recently, only those children in schools were permitted to draw who had the inclination and showed proficiency. Had the same test been applied to other subjects of instruction, the schools would soon have been emptied, and the teachers' occupations gone. But the relationship of children to other subjects of instruction was understood, because the teachers themselves understood those subjects; the relationship of drawing to the education of children has been misunderstood, from the accident of the teachers being generally unacquainted with its practice. They are not responsible for this lack of experience in drawing; the misconception of its uses, and the delusive notion of its difficulty, have been much owing to want of proper gradation and method in the arrangement of the elementary exercises, and because, in many courses of drawing, the

understanding has been too often ignored for appeals to the fancy or the taste, — very unreliable guides at first.

A reasonable and trustworthy power of drawing, which will enable the possessor to represent form with as much ease and certainty as to speak or write, which power is possible of attainment to every human being who is neither mentally nor physically incapable, either by lunacy, idiocy, blindness, or paralysis, — such a power must be based upon a thorough understanding of each step in and element of drawing, known by name and sight, from the point to the most subtle compound curve; from the geometric form to the last problem in perspective; and if from the first the hand is made the agent of the mind, in acquiring and testing, and displaying its knowledge, then understanding will quicken execution, and the two associated, acting and reacting upon each other, will inevitably develop ability to draw. Methods and systems of instruction designed to suit unusual faculties, either great or small, are not practical for general use; and this is the error into which artists have fallen, who, without long and extensive experience in art education, or such experience only as is limited to a few pupils, have designed special methods of instruction. It is the gaps between one step and another which frighten people of ordinary capacity, and hinder feeble footsteps. There should be no one point in a series of consecutive lessons in drawing which could be described as the place where the subject begins to be difficult. Instruction should proceed as though it were the ascent of an inclined plane, possible to all; not the climbing up of a mountain-side uneven in gradation, and interrupted by crevasses and precipices, requiring extraordinary faculties to surmount; and system should be the engineer, who, when the road has to be made and travelled, fixes the gradients, lays down the lines, and reduces or fills up inequalities to make the gradients safe and economic to average power.

For this reason, it would appear to be the duty of those who have by such experience become acquainted with the best methods of instruction, to endeavor to make them the common property of educationists, who know by their own experience that in the long run the best road is the safest, but not always the shortest.

Form is the language of nature, and drawing the speech of the eye, expressed by the hand. The alphabet of this language is the series of signs by which form can be represented, color being the

local, inherent, or transient circumstance. The letters in this alphabet are straight lines and curves, equal, proportionate, or various in the ratio of their simplicity or subtlety. It is necessary, therefore, that if we are to understand this language, we must first learn its alphabet, then spell its short words, and afterwards construct the sentences which delineate natural phenomena, or record our own perceptions of them. Lastly, if our natural qualities be receptive, capable of taking in the wealth of natural phenomena, and our tastes be cultivated into refinement, comes the faculty of originality in art, which is the result of educating all our faculties, not the spontaneous generation of passing fancy or of sudden caprice.

That is the experience of education generally, and art education supplies us with no new developments. The greatest men in all vocations are neither produced nor hindered by a system of education; they will come with our help or without it; but the average men can only be produced by systematic training and education, and those beneath the average require both. So that it comes to this: systematic education is necessary for some, requisite for most of us, and not without value even to the few who are destined to stand foremost and highest.

A sign of educational experience is when we fairly divide the labor of acquiring knowledge into proper stages, neither requiring the work of developed skill from the inexperienced, nor withholding the most advanced exercises from matured practice. It is not a sign of wisdom in the teacher when intense accuracy is expected from the young child who knows not wherein it consists; nor is it merciful to insist on the manipulated craft which comes by long practice, from those who are taking the first faltering steps. If the understanding is displayed and proved, manipulative dexterity will come, as surely as the mind is master of the body, in due time. It has been the fashion with some to say that no mechanical means of assisting the young beginner to draw should be allowed for an instant, for fear of crippling the young faculties, and that the drawing-book must be kept in one position always, regardless of the line to be drawn, or whether the anatomy of the human body was capable of drawing a certain line in a fixed position; nor must mechanical means of correction be allowed. Yet, if we observe the habits of experienced artists in their studios, we find they resort to every resource of mechanical assistance, reserving their skill and

power for the parts where mechanical means are useless, and human skill is absolutely required. So that, to judge by the rules laid down by theorists, the tests of geometric accuracy are to be forbidden to babes, whilst they are invariably resorted to as necessary and economical by strong men in their ripest development. That is a delusion and mere pedagogism. Drawing is easy enough to be capable of human attainment generally; but it is difficult enough to enlist all our powers, whether of scientific invention or artistic skill, and the time when mechanical means of correction are most required and most possible of usefulness, is when the artistic powers are the least developed in beginners, and can be most easily corrected and disciplined by scientific tests and criticism. The teacher who insists on the exactness of ninety degrees in a right angle drawn by a child of tender age, or who gives, as a preliminary exercise, the circle which it was Giotto's pride in his maturity to have drawn with a stroke, is imposing burdens grievous to be borne on the shoulders of the weak and unprotected, and crushing a faculty he is employed to cultivate. That is holding on by the horns of the altar, whilst the altar itself is dishonored and desecrated by the misinterpretation of its precepts. Approximate accuracy, such as may be expected of the individual in his particular stage of practice and development, is all that should be expected, as it is all that can be gotten from him. With this the teacher should be content, trusting to growth, development, and industry to do the rest. Those who learn with the most difficulty, and honestly express all the ignorance that is in them, sometimes come out right in the end, and know best the special forms of ignorance and truth by their own disciplined experience. But it is killing to such to apply the highest standard of exactness at once; it must be applied by degrees, and with a kindly manner which recognizes every advancement, while it impresses the pupil with a feeling that something else is yet to be attained. This is so well known, and so very generally practised in all other subjects, that I ought to apologize for referring to it as equally true of drawing, as a subject of instruction, and I should do so, were it not for the fact that I am conscious of tests being usually applied to first efforts in drawing by inexperienced teachers, which are unusual as they are unnecessary in other branches of education.

Measuring the accuracy of length in straight lines, or the altitude of curves, should be resorted to, not to save the exercise of the



judgment, but to correct the inaccuracy of the eye. Beginners will be unable to divide lines truly, and therefore every drawing lesson should include that exercise as part of its progress, as in the division of the central line in symmetrical figures ; but before proceeding to draw the more important parts of an exercise, the accuracy of the proportions should be tested, and faults corrected, either by the experienced hand of the teacher or by mechanical means, it matters little which, if the error be proved and put right. But to allow errors in the first steps to make all subsequent steps equally erroneous, from sentimental objection to the use of measuring as a corrective agent, is a mistake which perpetuates what it professes to remove. The eye will not be trained into truthful perception by letting it get accustomed to its own imperfection ; but it will be educated by the substitution of right for wrong every time the wrong is committed ; mechanical means alone furnish us with absolute accuracy in geometric forms, and are, therefore, the only tests to be relied on ; and in proportion as they are judiciously resorted to at first, will the need for them gradually cease. People speak of this as the use of crutches, which hinder the power of walking alone. If we look at the simile closely, we shall see that a crutch has sometimes protected and preserved an injured or undeveloped limb, until its powers have been restored or developed, and the crutch thrown away ; whilst a sentimental prejudice against its use might have led to permanent injury of the weak part that would have necessitated the use of the crutch for all after life. We need not fear that sound people will use such a support after the necessity has passed away, and to deny it to them when they want it, is dangerous cruelty.

A species of idolatry exists in the value attached to the drawing of straight lines and circles, in the minds of some. It may therefore be as well to state that to draw either, except by accident or mechanical assistance, is an impossibility, though to draw lines approximately straight and circular is not difficult of attainment, nor of extraordinary value when acquired, the result being so far inferior to the lines of the ruler or the compasses as to be universally discarded for the mechanically made lines, when straightness or roundness have to be relied upon. What we want in art education is to develop the power of doing that which to mechanical means is unattainable ; viz., original, tasteful, and learned work, scholar-like and artistic ; and the steps towards this

are only the means, not the end, which end may be hindered by exaltation of straight lines and circles as subjects of adoration.

Drawing is also made needlessly difficult by arbitrary regulations in its practice, such as insisting that the book or board should always be kept in one position. It would be as well to recognize that our hand and arm are only a complex instrument, like a machine, or compound pair of compasses, and that the movements of which they are capable are limited by the construction of the skeleton and the action of the muscles. Thus, a curve of short radius may be struck by the movement of the fingers on the second joint from their ends; a longer curve from the movement of the hand on the wrist joint; longer still, by the forearm on the elbow joint; and the longest and most perfect of all, by the whole arm moving from the ball and socket joint of the shoulder, the head of the humerus working in the concavity of the scapula. But from neither is it possible to strike a curve inwards towards the joint which is used as its centre, any more than it is possible to strike a curve with a pair of compasses which shall tend towards the centre from which it is struck. So that in drawing curves which tend inwards towards the hand, or the body, we must either shift our hands, arms, or body, to get at the centres of such curves, or we must shift the book or paper upon which we are drawing, to bring the centres into our hand or arm. Of the two, it will be found more convenient and orderly to allow pupils to change the positions of their books, rather than to change the position of their bodies, or to walk round the tables they are drawing upon, in search of the centres of each curve they have to draw.

Methods of testing the accuracy of geometric forms should be taught to pupils from the earliest lessons. Thus, when the definitions of plane geometry are given as exercises in drawing, preceding all other exercises, the test of the true construction of each shape should be shown to all pupils, and its application to the work of each be required. Thus, in drawing a square, not only the length of each side must be the same, as in a rhombus, but the length of the two diagonals be identical, or its form will be rhomboidal. Individual analyses for each form will be familiar to the teacher, and must be made equally familiar to the pupil, that the understanding may assist and support the hand and eye.

Having said thus much upon the proper value of the geometric exercises in drawing, and deprecated too stringent and arbitrary

regulations concerning its practice, perhaps it would be right, I should say, that the opposite mistake of undue laxity is as much to be avoided. In many points the teacher cannot be too strict in details which have an important share in successful work, however indirectly they seem to bear upon it. Thus, sharp points to pencils, and clean hands and rubber, and a book neither dog's eared, defiled, nor crumpled, should be absolutely insisted on, and incorrigibles made to draw upon slates only, until they can be trusted in contact with white paper without defiling it. It requires no great art genius in a teacher to insure that ; yet the ability to command it is half-way towards getting the best results from his instruction. The excellent order and method common in American schools make this an easy matter ; and it requires only that the accomplished teachers in the schools should turn their attention seriously to the subject of teaching drawing, to guarantee as good results in this as in any other branch of a common-school education already attained to by them.

There is a satisfaction to the student in mastering any subject, whether it be purely intellectual or experimental ; but there is a keen delight, a sensuous enjoyment in acquiring skill in art. The first time a student succeeds in realizing some natural effect, or expresses an idea of the mind which had previously existed only in thought, is a moment of inexpressible joy. It is beyond explanation to those who have not felt it, and worth all the pains and discipline it costs to obtain the sensation. Happily, this enjoyment, pure in its character and Godlike in its creativeness, is within the reach and appreciation of all who care to possess it ; but, like some other excellent inventions, it must be wooed, and "will not unsought be won." It does not drop like a ripe apple from the tree of knowledge into the mouth of a lazy Adam below, but needs well-directed climbing to be secured.

#### DRAWING ON THE BLACKBOARD.

The use of the blackboard for instruction in all subjects of elementary drawing is highly essential. It may be well, therefore, to suggest its capabilities and the best means of acquiring command over it.

The chalk used should be square in section, so that when it is advisable a line of uniform thickness can be obtained, which is dif-

ficult, if not impossible, with conical shaped pieces of chalk. A short stick of wood about eight inches long, having a cone of four inches altitude and two inches base, its apex at one end of the stick, and its axis the stick itself, the cone to be covered with wash leather, chamois-skin, or soft cloth, with a good staple, is the best implement with which to erase lines not wanted, the pointed end of the cone enabling the draughtsman to take out constructional or other lines, without destroying the curves which are near them.

Vertical lines are drawn from above downwards, the weight of the hand and arm allowed to fall naturally, assisting the eye. The draughtsman should stand with his right shoulder opposite the vertical lines to be drawn. Horizontal lines are made with the greatest facility when a fixed and firm point has been made to the left, and the arm and body moved with the hand firmly pressed from left to right, thus steadying the hand and keeping its position relative to the body the same. In drawing curved lines it is well, unless the draughtsman has great experience, to make a few points in the path the curve has to traverse; not more than four or six for any curve, but enough to guide the eye and give confidence to the hand. Passing the chalk point over the place where the intended curve is to be, without marking, is also useful, as it accustoms the hand and arm to the motion and change of direction required in the curve. Very rapid drawing upon the board is not recommended; because until the teacher has had great experience, it will not be likely to be accurate enough; on the other hand, the whole amount of time spent in drawing an hour's lesson for pupils ought not to be more than five minutes. The left curves should be drawn first, and when drawing the balancing forms on the right hand, the eye should take in not only the curve in process of formation, but that already made to which it is symmetrical. That suggests standing far enough from the board; and the teacher will find it is better to draw with the whole arm from the shoulder joint, than from the elbow or wrist, the face not being nearer the board than a distance of two feet in a perpendicular line to its surface.

The diagram should not extend much above the draughtsman's head, for above that his hand will lose power; nor below his elbow, when the arm hangs at the side; for to draw then brings the head close to the board, and prevents a clear view. If it be necessary that lines be made both above and below these points, the position of the body and head must be raised or lowered, so as to avoid

stooping or straining, which are fatal to good work. Drawing on the board is the most perfect illustration of the expression, "Free-hand Drawing"; and unless the hand be quite free and supple in its motion, and the arm as well, sweet curves or refined lines are impossible. The best preparation for blackboard work is to draw the diagrams with pen and ink on a small scale, which forms the habit of slow, deliberate, and thoughtful execution, besides familiarizing the eye and hand with the character and nature of the forms to be reproduced. Very good drawing on the board is easily acquired, but it must have a basis of the power to draw pretty well to begin with. After all, valuable as the ability is to teachers, as a means of instruction, it can only be regarded as a rough process to illustrate principles, and has the same sort of relation to actual representation, as the foundation of a building has to the whole and the parts of its superstructure. There is danger in thinking too little or too much of the power of drawing on the board; to the teacher it is, perhaps, above all other agencies in elementary instruction, and of less value than other processes in advanced instruction, being useless in conveying information concerning light and shade or color.\* Skill and readiness to draw forms on the board are sometimes confounded with the ability to explain the nature and character of the forms which are illustrated; but of the two, the latter is the more valuable; for, with intelligent descriptions and critical acumen, even rough diagrams may be made to serve all practical purposes of instruction, whilst the best drawings in so rude a material as white chalk will not teach of themselves, unless accompanied by clear and intelligent explanations. It is only the most simple and rudimentary forms which can be illustrated on the board; a draughtsman who wishes to illustrate subtle forms, or refined gradation in curvature, would not think of employing such a rough vehicle as white chalk, or so violently contrasted degrees of line and background as black and white.

The power to draw on the board is so easily acquired, that it is somewhat surprising to find such a degree of importance and value attached to its possession. It is the very cheapest way of securing a reputation for ability to draw; usually valued more than it deserves to be, and not valued at all except as a rough expedient by those who have a much better and more costly power, which includes in its comprehensiveness the ability to use all mediums upon any

\* For these subjects cartoon paper should be used.

material, applied to every subject capable of representation. So, that whilst to the teacher it is of the highest instructional use, as the alphabet is, it is easy of attainment to all, and nothing to be very proud about when acquired.

It is said that a drawing will convey a truthful idea when words fail. To do this, the drawing must be either very good and the words very feeble, or the audience very ignorant. There are very few drawings which convey completely any idea which could not be more fully expressed with the assistance of language, added to visible forms. At the same time, the understanding can be appealed to through the eye, as well as through the ear, and it is either bad economy which prefers one medium to the exclusion of others, or inefficient educational powers which cannot resort to all, or any one, as the need arises. The scale in music is perfectly illustrated by a ladder with half-steps between E and F, and B and C; and the major and minor keys are as well demonstrated by the circle and elliptic curves. There is hardly any educational process which may not draw its similes from subjects outside of its own resources; for development is very similar in all things: the growth of a plant, the progress of a day, the education of a child, the history of a nation, the comprehension of a religious or political principle, — all have stages almost precisely alike, which can be explained and understood by comparison.

It is the mark of a teacher that he detects these resemblances and uses them to illustrate principles, just as it is a sign of his power to grasp all means within his reach to make his explanations plain. Amongst these means is drawing, of no more importance than others, and of no less; and a teacher who can illustrate a lesson in physical geography by sketches of the natural products of the country, and character of the people and their habits, or who accompanies his historical exercises by drawings of the costume, architecture, portraits of eminent men, weapons and implements used in war and agriculture, or maps of contested ground, or charts of geographical distinctions, is twice as powerful a teacher as he who appeals only through the ears to the understanding, without illustration of forms or display of visible peculiarities.



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